

WHAT IS CLAIMED IS:

- 1 1. A method comprising the steps of:
2 receiving a first data stream, wherein the first data stream includes digital video data;
3 parsing the first data stream using a first data processor to identify a first channel,
4 wherein the first channel is a channel of compressed digital video having a
5 characteristic represented by a first value;
6 receiving data associated with the first channel at a transcoder, wherein the transcoder is
7 dedicated to transcoding video; and
8 generating a representation of the first channel, using the transcoder, wherein the
9 representation of the first channel is a channel of compressed digital video having
10 the characteristic represented by a second value.

- 11 2. The method of claim 1, wherein the step of parsing includes using the first data
12 processor, where the first data processor is a general purpose processor, and the step of
13 receiving data associated with the first channel includes the transcoder being a separate
14 component from the first data processor.

- 15 3. The method of claim 1, wherein the step of generating further includes the steps of:
16 decompressing the first channel to generate a first intermediate data;
17 scaling the first channel to generate a second intermediate data; and
18 compressing the first channel to generate the representation of the first channel.

4. The method of claim 1, wherein the step of generating further includes the steps of:
 decompressing the first channel to generate a first intermediate data; wherein the first
 intermediate data is frequency domain data;
 converting the first intermediate data to a second intermediate data, wherein the second
 intermediate data is time domain data having the characteristic represented by the
 first value;
 converting the second intermediate data to a third intermediate data having the
 characteristic represented by the second value; and
 compressing the first channel to generate the representation of the first channel.

5. The method of claim 1 wherein the characteristic is a scale factor.

6. The method of claim 1, wherein:
 the step of receiving includes receiving the first data stream at a first memory;
 the step of parsing includes storing the first channel at the first memory; and
 the step of receiving data associated with the first channel includes accessing the data
 associated with the first channel from the first memory.

7. The method of claim 1 further including the step of performing error correction and error
 handling at the first data processor.

8. The method of claim 1, wherein the steps of receiving the first data stream, parsing,
 receiving data at the transcoder, and generating support a real-time play back of the
 representation of the first channel.

9. The method of claim 1, wherein the step of receiving data includes receiving data at a
 transcoder, wherein the transcoder and the first data processor are integrated onto a
 common substrate.

- 1 10. The method of claim 9, wherein the common substrate includes a semiconductor
2 substrate.
- 1 11. The method of claim 1 wherein the characteristic is a scale factor.
- 1 12. The method of claim 1 wherein the characteristic is a compression factor.

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- 1 13. An integrated single chip system comprising:
2 a first processor to receive digital video data and provide parsed video data;
3 a second processor coupled to the first processor to access the parsed video data, the
4 second processor including a video transcoder.
- 1 14. The system of claim 13, wherein the first processor is a general purpose processor.
- 1 15. The system of claim 14, wherein the second processor further includes:
2 a data decompression portion;
3 a scalar; and
4 a data compression portion.
- 1 16. The system of claim 15, wherein the decompression portion includes a portion to perform
a frequency domain to a time domain transform.
- 1 17. The system of claim 16, wherein the frequency domain to time domain transform portion
is a portion to performs an inverse discrete cosine transform portion.
- 1 18. The system of claim 16, wherein the decompression portion includes a portion to perform
a de-quantization of data.
- 1 19. The system of claim 16, wherein the decompression portion includes a portion to perform
2 a DeZigZag of data.
- 1 20. The system of claim 19, wherein the decompression portion includes a motion
2 compensation portion.

- 1 21. The system of claim 16, wherein the decompression portion includes a motion
2 compensation portion.
- 1 22. The system of claim 15, wherein the decompression portion includes a motion
2 compensation portion.
- 1 23. The system of claim 22, wherein the compression portion includes a motion vector
2 generator.
- 1 24. The system of claim 23, wherein the motion vector generator includes a buffered motion
2 predictor.
- 1 25. The system of claim 24, wherein the compression portion further includes a portion to
2 perform a time domain to a frequency domain transform.
- 1 26. The system of claim 25, wherein the time domain to frequency domain transform portion
2 includes a discrete cosine transform portion.
- 1 27. The system of claim 15, wherein the compression portion includes a motion vector
2 generator.
- 1 28. The system of claim 25, wherein the motion vector generator includes a buffered motion
2 predictor.
- 1 29. The system of claim 13, wherein the second processor is coupled to the first processor
2 through a memory controller and a sequencer.